

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2003/001356

A. CLASSIFICATION OF SUBJECT MATTER		
Int. Cl. 7: C12N 15/12 C12N 15/63 C12N 5/16 A61K 48/00 A61K 38/45		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) CA, WPIDS		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched SEE ELECTRONIC DATABASES		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CAPLUS, WPIDS, MEDLINE, AGRICOLA, BIOSIS (sphingosine kinase, EC 2.7.1.91, overexpressi?, expressi?, endotheli?, huvec		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2002042358 A (SPIEGEL) 11 April 2002. See whole document.	1-43
X	WO 2002028906 A (BAYER AKTIENGESELLSCHAFT) 11 April 2002 See whole document	1-43
X	WO 2002000887 A (MEDVET SCIENCE PTY. LTD.) 3 January 2002 See whole document	1-43
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&" document member of the same patent family</p> </div> </div>		
Date of the actual completion of the international search 7 January 2004		Date of mailing of the international search report 15 JAN 2004
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929		Authorized officer DAVID OLDE Telephone No : (02) 6283 2569

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2001085953 A (MEDVET SCIENCE PTY. LTD.) 15 November 2001 See whole document	1-43
X	WO 2001074837 A (SANKYO COMPANY LIMITED et al) 11 October 2001 See whole document	1-43
X	WO 2000070028 A (JOHNSON & JOHNSON RESEARCH PTY. LIMITED) 23 November 2000. See whole document	1-43
X	WO 1999012533 A (MEDVET SCIENCE PTY. LTD.) 18 March 1999 See whole document	1-43
X	WO 1999061581 A (OFFICE OF THE DEAN OF RESEARCH AND GRADUATE EDUCATION) 2 December 1999 See whole document	1-43
X	Katsuma, S. <i>et al.</i> 2002. Signalling mechanisms in sphingosine 1-phosphate-promoted mesangial cell proliferation. <i>Genes to Cells</i> . 7:1217-1230. See whole document.	1, 2, 4-26
X	Nava, V.E. <i>et al.</i> 2002. Sphingosine kinase type 1 promotes estrogen-dependent tumorigenesis of breast cancer MCF-7 cells. <i>Experimental Cell Research</i> . 281:115-127. See whole document	1, 2, 4-26
X	Ancellin, N. <i>et al.</i> 2002. Extracellular export of sphingosine kinase-1 enzyme. Sphingosine 1-phosphate generation and the induction of angiogenic vascular maturation. <i>The Journal of Biological Chemistry</i> . 277(8):6667-6675. See whole document	1, 2, 4-26
P/X	Shu, X. <i>et al.</i> 2002. Sphingosine kinase mediates vascular endothelial growth factor- induced activation of Ras and mitogen-activated protein kinases. <i>Molecular and Cellular Biology</i> . 22(22):7758-7768. See whole document	1-43
A	Vann, L.R. <i>et al.</i> 2002. Involvement of sphingosine kinase in TNF- α -stimulated tetrahydrobiopterin biosynthesis in C6 glioma cells. <i>The Journal of Biological Chemistry</i> . 277(15):12649-12656. See whole document	1-43
A	Spiegel, S. <i>et al.</i> 2002. Sphingosine 1-phosphate, a key cell signalling molecule. <i>The Journal of Biological Chemistry</i> . 277(29):25851-25854. See whole document	1-43
A	Aleman, R. <i>et al.</i> 2001. Depolarisation induces rapid and transient formation of intracellular sphingosine-1-phosphate. <i>FEBS Letters</i> . 509:239-244. See whole document	1-43

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Box I Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos :

because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos : 20-24, 27, 28, 43 partially

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

These claims are directed to any agent, analogue, equivalent, mimetic, agonist or antagonist capable of modulating the functional level of SK. The scope of these terms is such that any and all known and unknown molecules or compounds are encompassed. This is clearly beyond the teaching and scope of the specification. Hence the search has been limited to the over-expression of sphingosine kinase and not to any and all molecules or compounds that may have this effect.

3. ☐ Claims Nos :

because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box II Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
WO 1999061581	AU 40979/99	CA 2329124	EP 1235913		
WO 1999012533	AU 89658/98	CA 2302838	EP 1011654		
	US 2002051777				
WO 2002028906	AU 23593/02	EP 1326986	US 2003125533		
WO 2000070028	AU 45239/00	CA 2372541	EP 1192247		
WO 2001074837	AU 51002/01	CA 2404965	CZ 20023282		
	EP 1268509	HU 0301691	NO 20024727		
	US 2002042101				
WO 2001085953	AU 56001/01	BR 0110759	CA 2408196		
	EP 1290182	NO 20025375			
WO 2002000887	AU 65699/01	CA 2414210	EP 1299548		
	NO 20026265				
US 2002042358	NONE				
END OF ANNEX					